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RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

May 8, 2009

Mr. Michael Adackapara
Santa Ana Regional Water Quality Control Board
3737 Main Street, Suite 500
Riverside, CA 92501-3348

Dear Mr. Adackapara:

Re: Comment Letter – Renewal of Waste Discharge Requirements for the Tentative Order No. R8-2009-0030, NPDES No. CAS618030 (Permit)

The Riverside County Flood Control and Water Conservation District (District) appreciates the opportunity to comment on the Renewal of Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the incorporated cities of Orange County, Tentative Order No. R8-2008-0030, NPDES No. CAS618030, Areawide Urban Storm Water Runoff (Permit) issued May 1, 2009. The following comments are specific to the revisions that were requested by USEPA and presented at the public hearing on April 24, 2009. The letter is divided into three sections:

1. Summary Comments and Recommendations;
2. District's Qualifications for Providing Comments on Low Impact Development (LID) Best Management Practice (BMP) criteria; and
3. Additional Supporting Information for Comments and Recommendations.

Summary Comments and Recommendations

Section XII.C.2 of the Permit stipulates that LID provisions require full retention of the 85th percentile storm volume except where retention of such volume is deemed infeasible. The District believes that defining LID to be limited to onsite retention is overly prescriptive and inconsistent with the broadly understood and implemented LID definition. *We are aware of San Bernardino County's comments refuting the infiltration centric definition of LID and are in full concurrence with them.*

The District further believes that this limited definition of acceptable LID inappropriately presumes that all project sites have the same land use, water quality and hydrologic issues; and that these issues must be addressed using the most prescriptive approach available. This approach not only discounts site specific factors (e.g.; slope stability, impervious soil conditions and project needs) that may preclude economical onsite retention, it also creates a prescriptive standard for LID that will make proactive support for LID implementation difficult, if not infeasible to engender. Additional flexibility is needed to facilitate effective, proactive and economical implementation of LID concepts.

The District is specifically concerned that:

1. The infiltration centric approach to LID ignores the substantial incidental infiltration and evapotranspiration benefits that properly designed filtration based BMPs provide;

2. The Permit precludes the Permittees from including properly engineered filtration BMPs as part of the default LID toolbox, thereby constraining the flexibility of Permittees and developers to select the most appropriate BMPs for specific site constraints and pollutants of concern; and

3. The Permit inappropriately focuses Permittees and developers on micro scale LID practices.

The District recommends that:

1. Section XII.C be reviewed and revised as necessary to recognize the goal of LID as mimicking the predevelopment site hydrology and not as a means of eliminating small storm runoff; and

2. Consistent with the above stated goal, the Permit specifically incorporates filtration and detention as part of the default LID toolbox by revising footnotes 56 and 57 to state:

   "The Permittees shall develop criteria to ensure that biofiltration, bioretention or other biotreatment systems are properly designed and constructed to maximize incidental infiltration and evapotranspiration of Vbmp."

District Qualifications for Providing Comments on Low Impact Development (LID) Best Management Practice (BMP) Criteria

The County of Riverside requested that the District research and develop a new development BMP implementation program in early 2005. The purpose of the program was to define the hydrologic design criteria, scale of BMP deployment, and design specifications necessary to ensure that new developments and redevelopment projects within the County implemented BMPs would achieve and maintain long term pollutant elimination or reduction effectiveness. This was necessary as the County is ultimately liable for the effectiveness of the deployed BMPs. The County believes it is important to avoid requiring BMPs predisposed to failure or public nuisance. By late 2005, the District had determined that vegetated BMPs (the types typically associated with LID) were likely to be the most effective in protecting the beneficial uses of receiving waters and least maintenance intensive over the life of a given project.

After consultation with Santa Ana Regional Water Quality Control Board (RWQCB) staff, the District presented recommendations to the Board of Supervisors regarding a path forward for the development of a BMP Implementation Program.

The recommendations to the Board included:

1. Requiring the use of BMPs that facilitated infiltration and retarding of peak flows from new developments;

2. Establishing numeric criteria for site design BMPs that would promote minimum implementation of LID techniques;

3. Establishing treatment control BMP substitution requirements for LID BMPs; and

4. Establishing numeric criteria (in conjunction with the Southern California Coastal Watershed Research Project's Hydromodification Study) that would allow crediting of LID BMP implementation against potential hydromodification impacts.

The District further recommended that a BMP Design Manual and public maintenance mechanism be developed to ensure the long term effectiveness of the BMPs. The Board directed the District to conduct a series of workshops with the public to further develop and refine the concept proposal.

The District held several workshops with the public and the Board of Supervisors between 2005 and 2007 to support the further development of the BMP Implementation Program. District staff also consulted with leading LID experts throughout the nation, including the authors of existing LID guidance in Denver, Colorado; Seattle, Washington; Maryland and California (Contra Costa County). In addition, the District also obtained a grant in 2006, in conjunction with Santa Ana Project Authority to convert the District's Market Street campus in Riverside into a regional demonstration and testing facility for the types of LID BMPs that were being proposed as part of the BMP Design Manual. In October 2007, Matt Yeager (PhD, San Bernardino County), in conjunction with the California Stormwater Quality Association (CASQA) and the Stormwater Monitoring Coalition (SMC), both of which the District is a member, obtained a grant to develop regional LID guidance for southern California. The District has since focused its efforts on assisting the joint CASQA/SMC effort to develop comprehensive guidance for southern California, with the intention of using that guidance to finalize the District's BMP program and incorporating the implementation program BMPs into the proposed LID Demonstration and Testing Facility.

Additional Supporting Information for Comments and Recommendations

1. The infiltration centric approach to LID ignores the substantial incidental infiltration and evapotranspiration benefits of properly designed filtration based BMPs.

   Research conducted by the American Society of Civil Engineers (ASCE), as part of their research of data in the International ASCE BMP Database, has indicated that there are significant volume losses associated with detention and filtration based BMPs. ASCE consultants speculated that the volume loss was associated with evapotranspirative and surface contact losses that are not typically considered in hydrologic BMP models and therefore ignored in BMP design. The BMP design criteria that the District has been developing is focused on design specifications that maximize the opportunities for maximizing incidental infiltration and evaporative losses in filtration based BMPs by requiring appropriate in-situ soils investigations, increasing contact time of runoff with engineered filtration media, ensuring the appropriate selection of plant pallets and properly designing subdrain systems. Further, the District's proposed LID Demonstration and Testing Facility has been specifically designed to measure and quantify the effectiveness of the proposed (and in progress) design specifications.

2. The Permit precludes the Permittees from including properly engineered filtration BMPs as part of the default LID toolbox, thereby constraining the flexibility of Permittees and developers to select the most appropriate BMPs for specific site constraints and pollutants of concern.

   USEPA's own guide to "Incorporating LID into Municipal Stormwater Programs", April 2009, EPA 901-F-09-005 states:

   "The goal of LID is to reduce runoff and to **mimic a site's predevelopment hydrology** by infiltrating, **filtering**, storing, evapotranspirating, and **detaining** storm water runoff" (emphasis added).

   As an example of potential inadvertent conflicts caused by the infiltration centric approach, the District would note that Natural Resource Defense Council (NRDC) testimony at the April 24, 2009 Public Hearing for the Permit stated that the purpose of an infiltration centric approach to LID was to ensure that water quality and hydromodification permit goals would be met. However, in addition to inappropriately specifying an overly prescriptive method of compliance, the NRDC approach would move the goal of LID from mimicking predevelopment hydrologic conditions to eliminating runoff from all but the most extreme storm events (95% of runoff events captured according to NRDC testimony). In the example provided in their slide presentation, 7% of the post-development "captured" storm events would have produced runoff in the predevelopment condition. This loss of small storm runoff may have adverse impacts on sensitive downstream habitat and unnecessarily put developers and Permittees in conflict with State and Federal regulations regarding habitat preservation. In order to address the conflict, which the District expects to be common in developing counties such as Riverside and San Bernardino, the developers and Permittees would be required to create an unnecessary administrative paper trail documenting the need to use filtration BMPs to pass what would have been natural runoff from smaller storm events through the project.

3. The Permit inappropriately focuses Permittees and developers on micro scale LID practices.

   Section XII.C.7 of the Permit focuses the Permittees on implementing LID "as close to the source as possible". Although the District believes that micro scale LID principals are an appropriate part of the LID tool kit, the District is concerned that exclusive reliance on micro scale LID will not result in sustained pollutant reduction over the long term. The District is specifically concerned that it is not administratively feasible for Permittees to consistently police individual properties (particularly residential properties) to ensure that distributed onsite LID features such as roof downspouts turned to pervious areas, porous pavements, cisterns, landscaping detention and other features are properly maintained for the entire life of a project or property.

The District, in the development of its tentative BMP implementation program has instead focused on more centralized site scale LID features such as porous landscaping detention, bioretention BMPs and other green concepts that maximize the use of common area landscaping, dual use facilities such as parks and/or LID BMPs deployed in larger publicly owned easements or parcels. The advantages of this approach are threefold:

1. The incorporation of site scale BMPs into landscaping or other multi-use features helps ensure that day-to-day vegetative and basic functional maintenance (trash and debris removal) are likely to occur by a regional entity such as a homeowners association, community service district or parks agency;

2. Site scale BMP deployment ensures that municipal BMP inspectors have specific locations to drive to for purposes of inspecting the function and maintenance of the BMPs; and

3. Site scale BMP deployment promotes the use of a public maintenance mechanism to ensure the long term treatment efficiency of the BMP (for example conducting removal and replacement of spent engineered filtration media or scarifying the bed of infiltration BMPs).

The District recognizes that micro scale LID features are an important component of a comprehensive LID strategy; however, based on the District's extensive evaluation effort, we submit that long term BMP effectiveness is dependent on having an LID BMP deployment program that supports effective and efficient BMP inspection, operation and maintenance. If BMPs that are completely dependent on site specific subsoil conditions become as numerous as roof downspouts, long term performance becomes infeasible to enforce.

Closing

Thank you for the opportunity to comment on the Permit. We appreciate your consideration of our comments and look forward to meeting with RWQCB staff to develop the 2009 Riverside County MS4 Permit. If you have any questions regarding these comments, please contact Jason Uhley at 951.955.1273.

Very truly yours,

Mark H. Wills

MARK H. WILLS
Chief of Regulatory Division

c: Riverside County Management Steering Committee
Santa Ana Region Technical Advisory Committee

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